Amendment to the Claims

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Currently Amended) A nucleic acid aptamer to the coagulation pathway factor ~~IX or~~ IXa.

2 -3 (Canceled)

4. (Previously presented) The aptamer of claim 1, having a dissociation constant of about 20 nanomolar (nM) or less.

5. (Previously presented) The aptamer of claim 4, wherein the dissociation constant ranges from about 400 pM to about 10 nM.

6. (Previously presented) The aptamer of claim 4, wherein the dissociation constant ranges from about 100 pm to about 10 nM.

7-11. (Canceled)

12. (Previously presented) The aptamer of claim 1, which comprises at least one modified nucleotide.

13. (Previously Presented) An aptamer comprising a nucleotide sequence selected from the group consisting of SEQ ID NOs:1-22, or a truncate thereof.

14. (Currently Amended) The aptamer of claim 13, wherein the sequence is selected from the group consisting of SEQ ID NO:70~~,~~ and SEQ ID NO:3~~, SEQ ID NO:17, and SEQ ID NO:71~~ or a truncate thereof.

15. (Previously Presented) The aptamer of claim 13, wherein the nucleotide sequence is SEQ ID NO: 3 or SEQ ID NO: 70.

16. (Canceled)

17. (Currently Amended) The aptamer of claim 13, wherein the sequence is SEQ ID NO:3 ~~or SEQ ID NO: 17~~ or a truncate thereof.

18. (Canceled)

19. (Canceled)

20. (Currently Amended) A pharmaceutical composition comprising a therapeutically effective amount of a nucleic acid aptamer to the coagulation pathway factor ~~IX or~~ IXa, in a pharmaceutically acceptable diluent or vehicle.

21. (Withdrawn, Currently Amended) A method of modulating the biological activity of a coagulation pathway factor, the method comprising: (a) administering to a warm blooded vertebrate host having coagulation pathway ~~facots~~ factor ~~IX or~~ IXa or the equivalent in need thereof an effective amount of a nucleic acid aptamer to the coagulation pathway factor IX ~~or IXa~~; and (b) modulating the biological activity of the coagulation pathway factor in the warm-blooded vertebrate through the administration of the aptamer in step (a).

22. (Withdrawn) The method of claim 21, wherein the administration is intravenous administration, intrasynovial administration, transdermal administration, intramuscular administration, subcutaneous administration, intraperitoneal administration, or topical administration to a blood vessel.

23. (Withdrawn) The method of claim 21, wherein the vertebrate is a mammal.

24. (Withdrawn, Currently Amended) A method of treating cardiovascular disease in a warm blooded vertebrate host, the method comprising administering an effective amount of a nucleic acid aptamer to the coagulation pathway factor ~~IX or~~ IXa to a vertebrate subject suffering from cardiovascular disease, whereby cardiovascular disease in the vertebrate subject is treated.

25. (Withdrawn) The method of claim 24, wherein the administration is intravenous administration, intrasynovial administration, transdermal administration, intramuscular administration, subcutaneous administration, intraperitoneal administration, or topical administration to a blood vessel.

26. (Withdrawn) The method of claim 24, wherein the vertebrate is a mammal.

27-67. (Canceled)

68. (Previously presented) The aptamer of claim 1 comprising at least one ribonucleotide.

69. (Previously presented) The aptamer of claim 1 comprising at least one deoxyribonucleotide.

70. (Previously presented) The aptamer of claim 1 comprising a single stranded nucleic acid.

71. (Previously presented) The aptamer of claim 1 comprising a double stranded nucleic acid.

72. (Previously presented) The aptamer of claim 12, wherein the modified nucleotide is a modified ribonucleotide.

73. (Previously presented) The aptamer of claim 72, wherein the aptamer comprises at least one 2'-modified ribonucleotide.

74. (Previously presented) The aptamer of claim 12, wherein the aptamer comprises at least one 2'-halo-modified nucleotide.

75. (Previously presented) The aptamer of claim 12, wherein the aptamer comprises at least one 2'-fluoro-modified nucleotide.

76. (Previously presented) The aptamer of claim 12, wherein the aptamer comprises at least one 2'-O-alkyl-modified nucleotide.

77. (Previously presented) The aptamer of claim 12, wherein the aptamer comprises at least one 2'-methoxy-modified nucleotide.

78. (Previously presented) The aptamer of claim 12 wherein at least one cytidine is 2'-deoxy-2'-fluorocytidine.

79. (Previously presented) The aptamer of claim 12 wherein at least one uridine is 2'-deoxy-2'-fluorouridine.

80. (Previously presented) The aptamer of claim 12 wherein all uridines are 2'-deoxy-2'-fluorouridine.

81. (Previously presented) The aptamer of claim 1, that comprises a 3' chain terminator.

82. (Previously presented) The aptamer of claim 1, that comprises about 15 to 100 bases

83. (Previously presented) The aptamer of claim 1, that has less than about 100 bases.

84. (Previously presented) The aptamer of claim 1, that has less than about 40 bases.

85. (Previously presented) The aptamer of claim 1, that comprises a covalently linked carrier.

86. (Previously presented) The aptamer of claim 85 wherein the carrier is a soluble polymer.

87. (Previously presented) The aptamer of claim 85 wherein the carrier is a biodegradable polymer.

88. (Previously presented) The aptamer of claim 85 wherein the carrier is polyethylene glycol.

89. (Previously presented) The aptamer of claim 1 additionally comprising covalently linked cholesterol.

90. (Previously presented) The aptamer of claim 1, wherein the aptamer comprises a consensus sequence comprising AUA.

91. (Previously presented) The aptamer of claim 1 comprising at least about 5 nucleotides at a 5' end of the aptamer that form base pairs with at least about 5 nucleotides at a 3' end of the aptamer.

92. -117 (canceled)

118. (Withdrawn) The aptamer of claim 13, comprising SEQ. ID. NO: 3.

119. (Previously presented) The pharmaceutical composition of claim 20 wherein the composition is in a unit dose.

120. (Previously presented) The pharmaceutical composition of claim 20, wherein the aptamer comprises a ribonucleotide.

121. (Withdrawn) The method of claim 21, wherein the aptamer comprises at least one ribonucleotide.

122. (Withdrawn) The method of claim 22, wherein the aptamer comprises at least one deoxyribonucleotide.

123. (Withdrawn) The method of claim 21, wherein the aptamer comprises at least one modified nucleotide.

124. (Withdrawn) The method of claim 24, wherein the aptamer comprises at least one ribonucleotide.

125. (Withdrawn) The method of claim 24, wherein the aptamer comprises at least one deoxyribonucleotide.

126. (Withdrawn) The method of claim 24, wherein the aptamer comprises at least one modified nucleotide.

127. (Withdrawn) The method of claim 23 wherein the mammal is a human.

128. (Withdrawn) The method of claim 21 wherein the vertebrate is a mammal.

129. (Withdrawn) The method of claim 128 wherein the mammal is a human.

130. (Withdrawn) The method of claim 24, wherein the administration is by coating a blood vessel tissue with the aptamer.

131. (Withdrawn) The method of claim 24 wherein administration is via a catheter.

132. (Withdrawn) The method of claim 25 wherein the administration is intravenous administration.

133. (Withdrawn) The method of claim 25 wherein the administration is subcutaneous administration.

134. (Withdrawn) The method of claim 25 wherein the administration is intrasynovial administration.

135. (Withdrawn) The method of claim 21, wherein the administration is by coating a blood vessel tissue with the aptamer.

136. (Withdrawn) The method of claim 21 wherein administration is via a catheter.

137. (Withdrawn) The method of claim 22 wherein the administration is intravenous administration.

138. (Withdrawn) The method of claim 22 wherein the administration is subcutaneous administration.

139. (Withdrawn) The method of claim 22 wherein the administration is intrasynovial administration.

140. (Withdrawn) The method of claim 21 wherein the host is in need of treatment for atherosclerosis.

141. (Withdrawn) The method of claim 21 wherein the host is in need of treatment for thromboses.

142. (Withdrawn) The method of claim 21 wherein the host is in need of treatment for hypertension.

143. (Withdrawn) The method of claim 21 wherein the host is in need of treatment for cardiac infarction.

144. (Withdrawn) The method of claim 24, wherein the cardiovascular disease is a disease in which thrombisis plays a role.

145. (Withdrawn) The method of claim 24, wherein the cardiovascular disease is atherosclerosis.

146. (Withdrawn) The method of claim 24, wherein the cardiovascular disease is thromboses.

147. (Withdrawn) The method of claim 24, wherein the cardiovascular disease is hypertension.

148. (Withdrawn) The method of claim 24, wherein the cardiovascular disease is cardiac infarction.

149. (Withdrawn) The method of claim 24 comprising contacting factor IXa with an aptamer to factor IXa.

150. (Withdrawn) The method of claim 21, wherein the aptamer is to IXa.

151. (Withdrawn) The method of claim 24, wherein the aptamer is to IX.

152. (Withdrawn) The method of claim 21, wherein the aptamer is to IX.